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GEOGRAPHICAL RECORD

AMERICAN GEOGRAPHICAL SOCIETY

ANNUAL MEETING OF THE SOCIETY. The Annual Meeting of the Society was held at the Engineering Societies' Building, No. 29 West Thirty-ninth Street, on Tuesday, January 25th, 1910, at 8:30 P. M.

Vice-President Greenough in the chair.

The following persons, recommended by the Council, were elected Fellows:

Felix H. Hunicke,
Albert B. Lord,
Miss Ella Huntting,
Abram G. Nesbitt,
Adolph Rusch, Jr.

REPORT OF THE COUNCIL

The Annual Report of the Council was presented and read by its Recording Secretary, Mr. Levi Holbrook:

NEW YORK, January 20, 1910.

To the American Geographical Society:

The Council respectfully submits the following report for the year 1909:

The number of Fellows on the 1st of January was 1,238. The additions during the year were 116. The losses by death, resignation, etc., were 100 and the total Fellowship on December 31st was 1,254, of which number 360 were Life Fellows.

There have been added to the Library 930 books, 3,780 periodicals and pamphlets, 1,112 maps and charts, and 13 atlases.

Seven meetings of the Society were held, at which addresses were made by

Mr. Herman Montagu Donner,
Professor William Morris Davis,
Miss Annie S. Peck,
Dr. Frederick Jones Bliss,
Mr. Arnold Henry Savage Landor,
Professor Charles Ernest Fay,
Commander Robert E. Peary.

The Cullum Geographical Medal has been awarded to Francisco P. Moreno for his work in the Andes and Patagonia; and to Ernest H. Shackleton for his explorations in the Antarctic.

The Charles P. Daly Medal has been awarded to William W. Rockhill for his travels and researches in China, Mongolia and Tibet; and to Charles Chaillé-Long for explorations and discoveries made by him in Africa.

There have been published in the *Bulletin,* besides the Geographical Record, the Scientific Notes, the Book Reviews and Bibliographical Lists, thirty-seven original papers. It is proposed to enlarge and improve the *Bulletin* during the coming year.

The Collection of maps and other appliances used by teachers of geography in European schools, which was made by this Society and exhibited in New York in 1908, has since been shown at the State Universities of Wisconsin, Minnesota, Ohio, and Michigan, the Universities of Chicago and Cincinnati, Denison University, Granville, O., and the State Normal College of Michigan, and has now been forwarded to the Pacific Coast. The demand for the exhibition from Universities, Colleges and Schools in the West, South and East, has been and continues gratifying, and letters from the various exhibitors testify to the educational value of the study of this material.

At the request of the Hudson-Fulton Celebration Commission the Society's collection of books, maps, etc., relating to Henry Hudson, Robert Fulton and their Times was exhibited, at No. 15 West 81st Street, during September and October and attracted many visitors.

The Society has received ten thousand dollars bequeathed to it, for its corporate purposes, by its late Fellow William R. Sands; and the sum has been invested in bonds, secured by mortgage of Real Estate in New York City.

The year 1909 has been a memorable one in the history of the Society. Its President, Mr. Archer M. Huntington, had for some time been impressed with the fact that the building No. 15 West 81st Street, although of recent and substantial construction and very beautiful, was fast becoming inadequate to the growing needs of the Society. On June 22nd, Mrs. Collis P. Huntington most generously conveyed to him, to be transferred to the American Geographical Society, free of all cost, a lot of land at the corner of Broadway and 156th Street, measuring 125 by 100 feet; and this land Mr. Archer M. Huntington has deeded to the Society for its permanent occupancy, stipulating only that there shall be erected thereon a building, the architecture of which shall harmonize with that of the Hispanic Society of America, which is in the immediate neighborhood. The Council accepted this magnificent gift with gratitude and enthusiasm; feeling that such an opportunity to secure for the Society a permanent, adequate and commodious home ought not to be neglected. The site may seem to some a little remote; but it is really very easily reached, and the city is constantly and rapidly growing in that direction. Already it is reached by subway, in 7 minutes from Columbia University, in 19 minutes from the new Public Library and the centre of the residential district at 42nd Street, and in 29½ minutes from Wall Street, the business centre of the town. Plans have been carefully prepared by Mr. Charles P. Huntington, Architect, for a building 125 feet on 156th Street and 65 feet on Broadway, which will be handsome, dignified, imposing and thoroughly well adapted to the purposes of the Society. When completed it will be an ornament to the City and a credit to the Society, its President and all concerned.

A special Building Fund has been established to which members of the Council and friends of the Society have already subscribed $83,000; and it is hoped that their generous example will be followed by others and the new building thus become a gift to the Society—leaving all of its present property intact, and the income therefrom available for current expenses. Building operations are now in progress and it is proposed to continue them so long as there is money in the special Building Fund. Operations to cease when that special fund shall be exhausted; to be resumed when the Fund shall have been replenished; and so forth and so on. Fellows of the Society have so recently made generous contributions for building purposes that the Council is reluctant to appeal to them again at this time; but all friends of the Society are informed that monies are needed for the completion of the new building, and that contributions to the Building Fund will be thankfully received.

For the general financial condition of the Society reference is made to the report of the Treasurer which is herewith presented.

All of which is respectfully submitted.

CHANDLER ROBBINS,
Chairman.

LEVI HOLBROOK,
Secretary.

REPORT OF THE TREASURER

The Report of the Treasurer, Mr. Henry Parish, Jr., for the year 1909, was read, in his absence, by Vice-President Greenough:

GENERAL ACCOUNT

The Treasurer respectfully reports:

On January 1st, 1909, there was on hand a balance of..		$4,602.20
During the year there have been received for Fellowship Dues, Sales of Publications, Interest on Investments, &c.	$23,323.78	
Legacy from the Estate of William R. Sands..........	$10,000.00	$33,323.78
Total........		$37,925.98
There have been expended for Salaries, Meetings, Library, Publications, House Expenses, Insurance, Postage, &c.	$20,891.27	
Invested in guaranteed mortgages....................	$14,650.00	$35,541.27
Balance December 31st, 1909....................		$2,384.71

The Reports of the Council and the Treasurer were approved and ordered on file.

The Report of the Special Committee, charged with the duty of selecting candidates for the offices to be filled, was presented and read:

NEW YORK, January 20th, 1910.

The Special Committee, appointed November 18, 1909, to nominate and recommend to the Society suitable persons to be elected in January, 1910, to fill vacancies then existing in its offices, reports that it recommends the election of the following-named persons to the offices designated:

President,	ARCHER M. HUNTINGTON,	term to expire in	1911
Vice-President,	J. HAMPDEN ROBB,	" "	1913
Treasurer,	HENRY PARISH, JR.,	" "	1911
Recording Secretary,	HAMILTON F. KEAN,	"	1913
Councillors,	ANDREW G. AGNEW, FRANK BAILEY, LEVI HOLBROOK, CHARLES A. PEABODY, PAUL TUCKERMAN,	"	1913

Respectfully submitted,

JOHN GREENOUGH,
ARCHIBALD D. RUSSELL, *Committee.*
HAMILTON F. KEAN,

The vote of the Society was unanimously in favor of the persons recommended by the Council, and they were declared duly elected.

Vice-President Greenough then introduced the speaker of the evening, Rear

Admiral Colby M. Chester, U. S. N., retired, who addressed the Society on "Regenerated Turkey." Stereopticon views were shown.

On motion, the Society adjourned.

PRESENTATION OF THE CULLUM GEOGRAPHICAL MEDAL TO DR. MORENO. The Cullum Geographical Medal, awarded to Dr. Francisco P. Moreno of the Argentine Republic, was formally presented to him, on Sept. 4, in behalf of the American Geographical Society, by the Hon. C. H. Sherill, Minister of the United States to Argentina. The presentation took place in the American Legation in Buenos Aires and was attended by thirty of the leading men of science of Argentina. In delivering the medal to Dr. Moreno, Minister Sherill paid high tribute to his achievements in the fields of geography and anthropology.

In reply to Mr. Sherill's remarks, Dr. Moreno expressed his profound gratitude for the honor conferred upon him by the American Geographical Society. He added that the occasion also evoked most grateful memories of the men who had assisted in the long labors for which he had received this signal distinction and of the famous secretaries of the Smithsonian Institution, whose advice and encouragement had always been most helpful.

Dr. Moreno has, for some months past, been active in the promotion of the International American Scientific Congress which will meet in Buenos Aires, this year, to celebrate the 100th anniversary of the Declaration of Independence of Argentina. He writes to the Society that he believes this Congress will help largely "to cement friendly relations between the United States and Argentina and be the means of further increasing mutual knowledge of their physical, economic, and social conditions."

NORTH AMERICA

EXPLORATION OF THE MOUNT McKINLEY REGION. Professor Herschel C. Parker, J. H. Cuntz, and Belmore H: Browne, all Fellows of this Society, expect to spend the approaching summer in the Mount McKinley region of Alaska. While they intend to climb Mount McKinley, if practicable, their principal work will be the scientific exploration of this little known region. They will accordingly be fully equipped with instruments to record the topography and hypsometry of the mountains and glaciers. They intend to spend from one to two and a half months on the ice and snow above the line of vegetation and to make photographic studies of the conditions they find there. For this purpose the party is being equipped with a complete outfit suited to high altitudes and arctic conditions. The party will ascend the Sushitna River, explore the difficult southern approach to Mount McKinley and it is likely that an effort to ascend these mountains will be made on its southern side. As the expedition will go north for scientific work in one of the most difficult mountain regions of Alaska and will be under the leadership of Prof. Parker, whose large mountaineering experience is well known, its purposes have been approved by our Council and the work will be done under the auspices of the Society.

SURVEY OF MOUNT BAKER QUADRANGLE. The topographic survey of the Mount Baker quadrangle, in the State of Washington, was completed last fall. The survey party was under the direction of J. E. Blackburn. In the course of the work Mr. Blackburn, with E. H. Jones, T. L. Duncan, and C. V. Guerin, climbed Mount Baker, from whose slopes and summit observations were made and mapping was done.

Mr. Blackburn says that the whole mountain is an almost unbroken glacier, only narrow rocky dikes protruding here and there through the vast ice mass. This glacial ice, constantly augmented by snowfall, accumulates in a number of huge gorges, forming glaciers that move down the mountain sides for several miles before melting. Thus the ends or lower boundaries of the glaciers are about 3,700 feet above sea level, whereas the altitude of the dome of Mount Baker is 10,745 feet. The climb to this summit was made in four hours by the topographic party from its last camp, which was pitched at an elevation of 5,200 feet.

Mount Baker was long ago one of the active volcanoes of the Cascade Range, and the steam issuing from the vents of its crater to-day show that its internal fires are not yet entirely dead. The crater is about 1,000 feet below the main dome of the mountain, and this last lap of the climb proved by far the hardest. Mr. Blackburn describes the summit as a table having an area of about 60 acres.

PROGRESS OF THE U. S. GEOLOGICAL SURVEY. The Thirtieth Annual *Report* of the Director of the U. S. Geological Survey for the fiscal year 1909 has just been issued. It announces that large areas that had been withdrawn from entry pending determination of their mineral or non-mineral character, were restored to agricultural entry after examination, and selling prices were placed on 1,500,000 acres of coal land. On information furnished by the Survey, lands available for water-power sites on 26 rivers in the Western States were withdrawn from entry.

Nearly 24,000 square miles were topographically surveyed. About 36 per cent. of the country has now been mapped in detail. Work on maps for an atlas of national forests was continued. Thirty folios covering as many national forests were finished and 19 others were nearly completed.

Work on the map of the United States, on a scale of 1:1,000,000, was begun during the year. This will form a part of the world map that is now in preparation under international agreement between several countries. Topographic and geologic surveys were made in Alaska of areas exceeding 4,000 and 5,000 square miles, respectively. Two of the copper-bearing belts of southeastern Alaska were mapped in detail and the copper and gold-bearing belt extending from the head of Copper River to White River was covered by a reconnaissance survey. Gold deposits, coal beds, and water resources of parts of Alaska were also studied, and statistics were collected to show the mineral production of the Territory.

Geologic work was done in all parts of the country, the investigations including the iron ores of New Jersey, Virginia, Alabama, Georgia, and Tennessee; the lead and zinc deposits and industry of the Mississippi Valley; the coal beds of Indiana, Illinois, Colorado, Utah, Montana, and Wyoming; the oil fields of Louisiana, Texas, Arkansas, Oklahoma, Colorado, Nevada and California; the peat deposits of Maine; the phosphates of Idaho and Wyoming; deposits of mica, manganese, copper, tin, tungsten, and tantalum in Western States; mineral paint ores in Pennsylvania; granites in New England, and building stones in Arizona.

Mining districts in Colorado, Utah, Arizona, Nevada, and Oregon were investigated. Co-operation with many States in geologic work was continued, and progress was made on the geologic atlas of the United States. The work on water resources comprised stream gauging at 829 stations. Examinations of underground water resources were made and co-operation with many States in these investigations was continued.

During the year 134 books and pamphlets and 289 maps were published. The Survey's maps now comprise nearly 1,800 sheets of the standard size, covering that many separate areas in different parts of the country. Nearly a million publications were sent out, of which about 450,000 were sold.

MISSOURI GEOLOGICAL REPORTS. "The Geology of Morgan County" by Professor C. F. Marbut, is the third of the series of detailed county geological reports issued by the Missouri Bureau of Geology and Mines which are to cover all the counties of the state. In addition to the geological detail the author has presented a clear exposition of the economic resources of the county. A map in colors shows the distribution of rock formations in addition to cultural detail.

"The Geology of Pike County" is by Mr. R. R. Rowley, who had long studied the palæontology of Pike County. He has established the horizons in which certain groups of fossils occur, the geological sections for the county and he accompanies the report with a geological map.

Probably the most important report yet issued by the Missouri Bureau of Geology and Mines is "Geology of the Disseminated Lead Deposits of François and Washington Counties" by Dr. Ernest R. Buckley, to which Vol. IX (Parts 1, and 2) is given. The report adds to our knowledge of one of the most important deposits of lead ore in the United States. Attention is especially directed to the geological history of the area in its relation to the ore deposits. The large amount of illustrative matter includes photographic views, maps in colors, and many profiles, sections, etc. Part 2 is given entirely to 117 plates.

FLORIDA STATE GEOLOGICAL SURVEY. The second annual *Report* of this Survey has been published under the supervision of E. H. Sellards, State Geologist. It includes a report on the mineral industries and a report on the geology of Florida, with special reference to stratigraphy, to which is added a chapter on the topography and geology of southern Florida. The report of stratigraphy was prepared in co-operation with the U. S. Geol. Sur., in accordance with the agreement of 1907. The *Report* is illustrated with half tones and accompanied by a geological map of the state in colors (See New Maps, p. 152).

BANQUET OF THE GEOGRAPHICAL SOCIETY OF CHICAGO. The annual banquet of the Geographic Society of Chicago was held at the La Salle Hotel on Jan. 26, 1910. Six hundred persons participated. The guests of honor were Prof. T. C. Chamberlin of the University of Chicago and Commander Robert E. Peary, U. S. N., to each of whom the Society presented its Helen Culver gold medal. Miss Culver was herself at the speakers' table.

The President of the Society, Mr. Jesse L. Smith, made the opening address. President Harry Pratt Judson of the University of Chicago was the toastmaster. Prof. U. S. Grant of Northwestern University made the speech, presenting the medal to Prof. Chamberlin. The inscription on the medal read:

"Presented, April 26, 1910, to Professor Thomas C. Chamberlin for distinguished contributions to the principles of dynamic geography and for the planetesimal hypothesis from which they spring."

Prof. Chamberlin expressed his pleasure in the honor conferred by his co-workers in the science of geography.

The address of presentation for Commander Peary was made by Prof. R. D. Salisbury of the University of Chicago. The inscription on this medal read:

"Presented, April 26, 1910, to Commander R. E. Peary, U. S. N., for distinguished services in arctic exploration, and for the first achievement of the North Pole, April 6, 1909."

In Commander Peary's response he gave a brief résumé of his many years of continued effort, with its failures and final success. He expressed his keen gratitude for the recognition and approval of the Society.

SOUTH AMERICA

THE CHILEAN CENSUS OF 1907. The figures for this census, which was taken on Nov. 28, 1907, have just been published by the Government under the title "Sinopsis Estadistica Jeográfica de Chile en 1907" (Santiago, 1909). The 23 provinces and the Magellan Territory have an area of 758,206 square kilometers, a population of 3,254,451, giving a density of 4.2 to the square kilometer. The most populous provinces are Santiago, 517,648; Valparaiso, 281,872; Concepcion, 217,393; Coquimbo, 175,149; Nuble, 166,340; Colchagua, 159,119; Cautin, 140,159; Aconcagua, 128,644; Valdivia, 118,842. Foreigners number 134,524, of whom 72,378 are Europeans (including 18,755 Spaniards, 13,023 Italians, 10,724 Germans, 9,845 English and 9,800 French); and 58,118 Americans (including 27,140 from Peru, 21,968 from Bolivia, 6,956 from Argentina and 1,055 from the United States). The Chinese number 1,920 and the Araucanian Indians, 101,118. The cities with more than 20,000 inhabitants are Santiago (332,724), Valparaiso (162,447), Concepcion (55,330), Iquique (40,171), Talca (38,040), Chillan 34,269), Antofagasta (32,496), Viña del Mar (26,262).

AFRICA

ANOTHER LINK IN THE CAPE TO CAIRO R.R. A despatch from Khartum (*London Times,* Weekly Edition, Dec. 31, 1909), said that on Jan. 1, 1910, another section of the railroad on the Cape to Cairo route would be opened to traffic. The road had been extended from Khartum, along the west bank of the Blue Nile, to the south-east and had reached Wad Medani, on that river, 120 miles from Khartum. Wad Medani is an important town on the Blue Nile, the headquarters of the Governor of the Blue Nile province and of one of the Sudanese regiments. According to the plan adopted some years ago, the Cape to Cairo railroad is to extend eastward towards the Abyssinian frontier in order to avoid the wide, marshy region along the White Nile.

ASIA

COMPLETION OF THE PEKING-KALGAN R.R. This railroad, the first to be built by Chinese engineers and with Chinese money, was opened on Oct. 2, 1909. This is the first section of the line that is to extend west from Kalgan, along the edge of the high plateau of Mongolia to Kwei-hwa-tshöng and thence to Hokau on the great northern bend of the Hoang river. This extension from Kalgan will be about 250 miles long and is to be completed in seven years. China proposes, later to extend a railroad from Kalgan across Mongolia to Kiachta, on the southern border of Siberia, also to be built by Chinese engineers. This line will follow an old caravan route through the wastes of northern Mongolia. The Russians propose to build a line from their Trans-Siberian line, south of Lake Baikal, to Kiachta and, when these two projects are carried out, there will be a new and much shorter rail route between the European markets and the Far East than that provided by the Siberian-Manchurian lines through Harbin.

Kalgan, the present terminus of the line from Peking to the west, is a large city and the most important trading point, northwest of Peking, along the edge of the Mongolian plain. Even in Marco Polo's day the region it occupies was known, far and wide, for its vineyards and orchards. The new line passes through a very fruitful and populous country, inhabited chiefly by Mohammedans. It is expected that the railroad across Mongolia will greatly stimulate Chinese immigration into that region. (*Geog. Zeitsch.,* Vol. 15, p. 705.)

Meanwhile, according to *Globus* (Vol. 96, p. 370), the Chinese government will establish an automobile line through the Gobi Waste between Kalgan and Urga with the special purpose of using freight motors instead of camel caravans in the tea trade.

DR. F. J. BLISS'S LECTURE BEFORE THE SOCIETY. In his lecture "A Palestine Pilgrimage," before the Society, on Nov. 23, Dr. F. J. Bliss, for ten years Field-Officer of the Palestine Exploration Fund of London, touched only incidentally on his own specialty of archæological discovery, though he explained the results and some of the methods of recent excavations. Thus, before reaching Jerusalem, the audience saw, with the aid of the lantern, the massive monoliths, constituting the Pre-Israelite High-Place recently excavated at the site of Gezer by Mr. R. A. S. Macalister, a former colleague of Dr. Bliss. These pillars were doubtless standing when Gezer became part of the dowry of Pharaoh's daughter, at the time of her marriage to Solomon. At Jerusalem, he gave a view of the shaft dug by Sir Charles Warren, over 40 years ago, which revealed the colossal foundation stones of the Jewish Temple, 80 feet below the present surface. The excavations conducted by Dr. Bliss and Mr. A. C. Dickie of London, in 1894-1897, were also illustrated by plans and views, showing the recovery of the remains of ancient city-ramparts, with gates and towers, some of which are probably identical with those besieged by Titus. The original lines of the once arcaded Pool of Siloam were also recovered, with a magnificent flight of steps leading to it, and a church subsequently built over it—a church which was first described by a pilgrim of the sixth century, and which disappears from history about the time Columbus discovered America.

Later a side-excursion was made to the Low-Country between the Judean Hills and The Philistine Plain, for the purpose of seeing the sites where the lecturer excavated several ancient towns. Prominent among these was the mound of Lachish—one of the first places taken by Joshua—whose 60 feet of accumulated debris were proven, by careful and minute excavations during four seasons, to conceal the remains of eight superimposed towns, covering a period of some 1,200 years, beginning in early Pre-Israelite times and terminating with the Greek era. Ground plans of some of the towns were shown, together with views of pottery and other finds. Only the barest outlines of the work could be indicated, while the recent excavations of the Austrians at Jericho, with the present work now being carried on by the Harvard Expedition at Samaria, were merely mentioned. The main theme of the lecture followed the well-known paths of Palestine travel.

AUSTRALASIA AND OCEANIA

PROF. DR. NEUHAUSS IN KAISER WILHELM LAND. A letter from this explorer written at Sissanu, in Kaiser Wilhelm Land near the Dutch New Guinea border, on Sept. 10, 1909, is published in the *Zeitschrift* of the Berlin Geographical Society (No. 10, 1909, pp. 689-90). He set out, with missionary Keysser, in January, last year, from the Sattel-Berge near Finsch Haven, for a journey of 40 miles into the interior through a wholly unexplored region. He found it a wild mountain land, very difficult to traverse, as the faint, native paths lead continually up and down the almost precipitous slopes of the mountains, many of the ascents and descents being over 3,000 feet. The villages of the blacks were found as high as 4,580 feet above the sea and the region was far more populous than had been supposed. He crossed the large Bulessom river which empties into Huon Gulf, over 30 miles north of its mouth. He made route surveys, many observations for heights and collected cartographic data which have enabled him to make a map of nearly the whole of Kai Land as the southeastern peninsula of Kaiser Wilhelm Land is called.

Later, he found distinct traces of former glaciation along the coast of Huon Gulf to the south of the Markham river mouth. In May and June he made two journeys up the Markham river and established the fact that it is navigable by the flat bottom boats of the natives for at least 60 miles. On account of the hostility of natives living around Lake Womba, the river had not hitherto been ascended by Europeans more than 18 miles. It does not lose itself in swamps, as had been supposed, but maintains a breadth of over 300 feet with a depth, in part, of 10 to 13 feet and its wide valley (up to 19 miles) between high mountain chains, is well populated.

The explorer says that, at Sissanu, an earthquake, in December, 1907, caused important surface changes. A coastal strip some miles in length sank several meters so that many palm trees, now dead, are half submerged.

NEW ZEALAND GEOLOGICAL SURVEY. This Survey has published *Bull.* 7 (New Series), on "The Geology of the Queenstown Subdivision, Western Otago Division," by Prof. James Park, who was engaged for five months in the study of this mining region, among the finest of the New Zealand Alps in South Island. The report contains 112 pp. of text, with many superior illustrations and maps. It includes an investigation of the configuration and physical features of the land, with special attention to evidences of former glaciation; and studies of the rock formations and geological structure, the nature and extent of gold-bearing alluvial drifts and lodes at Macetown, Skipper's and Arrow and the water supply.

POLAR

CAPT. BERNIER IN THE AMERICAN ARCTIC. Captain J. C. Bernier sailed from Quebec on the Canadian polar steamer, the *Arctic* (formerly the *Gauss*), on July 28, 1908. He had as scientific assistants, Prof. J. MacMillan, geologist, and W. E. Jackson, meteorologist, the latter being expected to take magnetic observations at the winter quarters. Dr. Joseph Bolduc was the physician of the party. A quick journey was first made to Etah, near Smith Sound, to leave some supplies for Dr. Cook. Capt. Bernier then passed through Lancaster Sound, made a short stop in Erebus Bay, on the south coast of North Devon, Barrow Strait, and then, through Melville Sound, he reached Melville Island where he passed the winter of 1908-9 at the spot where Parry had wintered in 1820.

Last spring a sledge party was sent westward to Banks Land whose eastern shores were reached on April 26, after 20 days of travel. The coal outcrops on the north coast of Banks Land, discovered by Dr. Hamilton in 1856, were also visited and also the cairn erected by McClure in 1853 on Dealy Island. This depôt was found to be despoiled of everything excepting a little coal and some pieces of canvas. The records left by Parry were found and brought back and also a pole used by Sir John Franklin. Capt. Bernier says that if his instructions had not limited him, he might easily have made the northwest passage once more.

He took formal possession of the whole archipelago from 60° to 140° W. and up to the North Pole (?), including the islands discovered by the Norwegian Sverdrup. He found on Melville Island many musk-ox, reindeer, wolves and foxes, besides some polar bears and seals along the coast.

On Aug. 12, 1909, after 11 months in the archipelago, the expedition sailed from Melville Island and reached Quebec on Oct. 5. According to the report of a luncheon given to Capt. Bernier (Ottawa *Citizen,* Oct. 18), Sir Wilfrid Laurier, who was present, expressed the hope that Capt. Bernier would be ready to start again in 1910 with the same ship and crew, and promised that a free hand would be given to him to go to whatever latitude he found possible.

THE NORTHEAST PASSAGE. The Russian government has long believed that it may be found to be practicable to use the Northeast Passage as a sea route, especially for war vessels. This probability is believed to have been already demonstrated in the western part of the Asian Arctic Ocean. In November last the ice breakers Taimyr and Waigatch sailed from St. Petersburg for Vladivostock with the intention, next summer, of entering the Arctic Ocean through Bering Strait and studying this question along the northeastern coast of Asia.

DR. V. PIETSCHMANN IN WEST GREENLAND. This well-known Vienna zoologist has returned from West Greenland where his attention was especially given to the collection of the lower forms of life in the ocean waters. He has brought home 9 boxes of prepared specimens for the k. k. Naturhistorisches Hofmuseum.

THE SWISS-GERMAN GREENLAND EXPEDITION. The scientific members of this expedition (1909) were Dr. A. Stolberg of Strassburg and Dr. E. Baebler and Dr. A. de Quervain of Zürich. They made investigations of the upper air with the aid of 60 pilot balloons; took salinity measurements during the ocean voyage and in Godthaab Harbor; secured specimens of the sea bottom in this fiord; made measurements of evaporation and of carbonic acid in the atmosphere, the first researches of the kind in that latitude; studied some low forms of life in relation to similar work in the Alps; and travelled over the inland ice for about 60 miles from its edge, mapping its surface forms wth the aid of a theodolite and discovering, about 50 miles from the edge, a great system of crevasses. (*Pet. Mitt.,* Vol. 55, No. 12, p. 374, 1909.)

Does Novaya Zemlya Consist of Three Islands? The expedition sent to Novaya Zemlya by Gov. Sosnowsky returned to Archangel at the end of September bringing the surprising information that in Cross Bay they had discovered a waterway which extended clear across to the Kara Sea; thus they were able to prove that Novaya Zemlya consists of three instead of two islands.

Surveying the North Coast of Siberia. The *Bulletin* reported (Vol. 41, p. 384) the sending of an expedition by the Imperial Russian Academy of Sciences for the survey of the northern coast of Siberia from the Lena delta to Bering Strait. It is now learned (*Pet. Mitt.,* Vol. 55, p. 372) that the western section of the party, under the geologist, U. A. Volossovitch, has completed the survey between the Lena and Kolyma rivers. It is not surprising that many new indentations have been discovered since the only survey along this coast was made by Dim. Laptef on shipboard, in 1739-42, excepting the stretch between the Indigirka and the Kolyma which was examined in 1823. New proofs were found of the shallow depths of the Arctic Ocean along this coast.

The Norwegian Expedition to Spitzbergen. Captain Isachsen's expedition to Spitzbergen returned to Christiania on Sept. 18, 1909, after a very successful season of field work. The 15 men in the party, including two geologists and two topographers, sailed from Norway about the middle of June. The topographers were busy till the middle of August on the west coast of the main island between Ice Fiord and King Bay and also on the coast and in the interior of Prince Charles Foreland. Their work in the latter part of August was on the north side of the main island between Dane Island and Wood Bay. The geologists were at work in July in Prince Charles Foreland, on the coast to the east of Foreland Sound and on the peninsula between English and King Bays. In August, the rates of movement and recession of Lilliehoek Glacier were ascertained and the crystalline schists and eruptive rocks of the interior were studied; also the Devonian formation between Red and Liefde Bays and on Reindeer Peninsula. Early in September, the entire party were at work on both sides of Foreland Sound and in Green Harbor. The vessel, meanwhile, made soundings in King Bay and in the northern part of Foreland Sound. The weather was not very favorable for topographic work, as fog and rain prevailed. The summer season was late. Foreland Sound was not free of ice till the middle of July, a month later than usual. Ice was fast to the north coast throughout the summer. (*Globus,* Vol. 96, p. 370.)

Shackleton Will Not Return to the Antarctic. Sir Ernest Shackleton denies the rumor that he will head another expedition to the Antarctic in the immediate future. He says, however, that should he decide to go south again he would travel towards the pole from Weddell Sea or Kaiser Wilhelm II Land.

The Size and Mean Height of Antarctica. Professor W. Meinardus has a paper in the November and December numbers of *Petermanns Mitteilungen* in which he discusses the distribution of atmospheric pressure and the consequent exchange of air between the northern and southern hemispheres and attempts to deduce from these data an approximate idea of the mean height of the southern continent. The tentative conclusions he reaches are that, having regard to the proportion of the Antarctic area known to be covered by sea, the land surface may be taken as 14,000,000 square kilometers and its mean height at 2,000 meters with a probable error, one way or the other, of 200 meters.

Commenting upon Dr. Meinardus's deductions, *Nature* says that the values he gives for the size and mean height of Antarctica may not be very far from the truth. Recent explorations, at least, suggest that these values are worth keeping in view. If the estimate as to size is approximately correct, Antarctica is one and a half times as large as Europe. It is also the highest of the continents, the mean height of Asia (950 meters) being less than half that of Antarctica as calculated by Prof. Meinardus. The enormously thick covering of inland ice is, of course, an important factor.

PHYSICAL GEOGRAPHY

AN ATLANTIC DEEP SEA EXPEDITION. The London *Times* (Weekly Edition, Nov. 12, 1909), says that the Norwegian government has donated the use of its steamer *Michael Sars,* for a scientific expedition in the Atlantic from the Canary Islands to the Faröes. The vessel will be engaged in this work for four months. Sir John Murray, Dr. Johan Hjort of the Department of Fisheries, Norway, and Dr. Helland-Hansen, the Norwegian oceanographer, will take part in the expedition. The purpose is to try in the ocean the new methods and instruments that have come into use in the past few years. It is believed, for example, that very large fishing nets and trawls may now be used successfully at great depths—even down to three and a half miles. The *Michael Sars* has recently brought up from a depth of over a half mile, 225 fish, 100 of them belonging to new species. If these largest catching appliances can be used with success in the greatest depths of the Atlantic, important zoological results may be obtained. Special attention will be given to the distribution in depth of the pelagic algæ and their relation to the depth to which sunlight penetrates in different latitudes. Much interest will be attached to observations with Ekman's new current meter, which will be used to measure the rate of currents over oceanic shoals. The *Michael Sars* will leave Plymouth about April 6. A series of sections will be made from the coasts of Europe over the Continental Slope into deep water as far south as Gibraltar or beyond. It may be possible to make records, by this instrument, in very deep water, where our present knowledge of currents is almost nothing. Attempts will be made to force long tubes into the sea floor at oceanic depths with a view of procuring sections and ascertaining if there be layers differing in composition.

THE MESSINA EARTHQUAKE. The Italian earthquake of Dec. 28, 1908, was of such interest to the people of earthquake-shaken Japan that they sent their great seismologist, Dr. F. Omori, at once to study the phenomena. He arrived in the district about the middle of February, remaining till the end of April. He studied the seismological phenomena while his colleague, Prof. F. Nakamura, studied architectural questions. At the end of a year his preliminary reports was written, published in English, and delivered in America. ("Preliminary Report on the Messina-Reggio Earthquake of Dec. 28, 1908," by F. Omori, *Bulletin* of the Imperial Earthquake Investigation Committee, Vol. III, No. 2, November, 1909, pp. 37-45.)

Dr. Omori shows that the Tokyo seismograph records indicated that a great shock (three times larger than the 1905 earthquake in Calabria) had originated in or near Calabria with large casualty, the time of origin being closely known.

In the field he found that the earthquake motion was sensible within an area of radius of 200 kilometers, buildings being damaged or destroyed throughout an elliptical area thirty kilometers by twenty, containing the cities of Messina and Reggio, with a population of 190,000 people.

Almost all the houses in Messina were cracked or absolutely demolished. The city streets, usually less than 11 meters wide and with four to six-story buildings, were completely blocked with stones and mud, whose average depth was 5 meters. Consequently, a small proportion of those who escaped out of doors saved themselves. A little over 100,000 souls perished. The seismic intensity in Messina was a little less than that of Nagoya, Japan, during the great Mino-Owari earthquake of 1891, yet the loss of life compares in such ratio that Dr. Omori regards 998 out of every thousand persons in Messina who died as having been the victims of the bad construction of houses.

It is shown that the earthquake was not volcanic, but "caused by the sudden formation or extension of a crack within the earth's crust in a E. S. E. and W. N. W. direction, whose plane was nearly vertical or inclined slightly towards N. N. E."

The *tsunami* or *maremoto,* often erroneously called tidal waves, was observed for 38 kilometers on the Calabrian coast and 100 kilometers on the coast of Sicily, doing much damage to houses, bridges, breakwaters, etc., and rising to heights of from .8 to 10.6 meters. The tsunami moved northward through the Straits of Messina and seems to have been due chiefly to the settling of the loose surficial deposits through a height of 1 or 2 meters.

One of the maps shows clearly the relations of the area of violent motion to the similar areas for the twelve other great destructive shocks of Calabria since 1638, illustrating very clearly "the principle that great earthquakes in a given region occur, not everywhere at random, but along a definite line of weakness in the earth's crust, namely, a seismic zone. Further, the areas of violent motion of the different earthquakes are almost perfectly exclusive of each other, whence it may be concluded that the great disturbances are not repeated from one and the same center, but happen successively from different points or portions along the seismic zone. In other words, the places seismically most dangerous in Central and Southern Italy are exactly those points along the seismic zone here defined which have not yet been visited by a very violent shock. The two cities of Messina and Reggio-Calabria, which formerly had not been shaken by a great telluric convulsion originating from a center close by, had evidently their turn on the present occasion, and for that very reason may be supposed as being free from the danger of a future seismic catastrophe. Even in the case of a great earthquake occurring along the seismic zone, the intensity of motion at these two cities would, on account of the distance from the center, not be so very strong, and precaution taken in the construction of houses would be sufficient to prevent the loss of life and property." L. M.

OBITUARY

DARIUS OGDEN MILLS. Mr. Mills died on his estate near San Francisco on January 3, 1910. He was born at North Salem, N. Y., in 1825. His distinguished career as a financier and publicist has, for many years, made his name well known to his fellow-countrymen. Mr. Mills became a Fellow of the American Geographical Society in 1880, a member of the Council in 1882 and Vice-President of the Society in 1901, which position he held until his death.

At a meeting of the Council on Jan. 20, 1910, the following minute was read by President Huntington and adopted by the Council:

"The members of the Society and of the Council mourn the loss of a man truly gifted with greatness of spirit whose life in all his relations with his fellowmen bore witness to the influence and power of integrity. He, many years, maintained the character of truth which his greatness and his simplicity entitled him to wear as a garment before men.

"We all grieve for the loss of one who touched profoundly our sense of the nobility of perfect honesty, sincerity, manhood and dignity."

WILLIAM HENRY HELME MOORE. Mr. Moore died at his residence in New York City, on January 4, 1910, in his 86th year. For 47 years he had been identified with the American Geographical Society and was one of its most esteemed and prominent members. Following is an extract from a minute read by Vice-President Anton A. Raven, at the meeting of the Council on Jan. 20, 1910, and adopted by the Council:

"Mr. Moore entered Union College and was graduated from that institution in 1844. Later, he received the degree of LL.D. from his Alma Mater. His connection with this Society began as a Fellow in 1863. In 1870, he was elected Domestic Corresponding Secretary and he became Vice-President in 1897. Advancing years made it necessary for him to retire from the Council in 1906 but his interest in the Society was undiminished.

"Mr. Moore was a man of high ideals, courteous and sympathetic in his demeanor and had the respect and esteem of all with whom he was brought in contact. It is a pleasurable duty to bear testimony to his worth. We mourn his loss and tender to his family our warm sympathy in their bereavement."